REMARKS

Applicant thanks Examiner Kruer for the January 31, 2005 interview in view of the final Office Action mailed October 6, 2004, [Paper 1002004]. In response to the October Office Action and the January interview, the present application has been carefully reviewed and amended. Entry of the present amendment and reconsideration of the application are respectfully requested.

Telephonic Interview – Substance of the Interview

A telephonic interview was conducted between examiner Kevin R. Kruer and applicant's attorney, Brian Shaw, on 31 January 2005.

1. No exhibits or demonstrations were shown or conducted.

2. Generally, the subject matter of all the claims was discussed.

3. The prior art relied upon in the outstanding rejection was discussed.

4. Proposed amendments relating to particle size and characteristics of the particles were discussed.

5. The thrust of the arguments were directed to the disclosure of the references, and the asserted combination of the references.

6. No other pertinent matters were discussed.

7. Applicant believes the general results or outcome are accurately reflected by the interview summary form completed by the Examiner.

Non-statutory Double Patenting

Claims 37-60, 62-68 and 70-85

Claims 37-60, 62-68 and 70-85 stand rejected under the judicially created doctrine of obviousness-type double patenting.

Upon resolution of the remaining rejections, applicant will submit a terminal disclaimer to overcome the rejections under the judicially created doctrine of obviousness-type double patenting for Claims 37-60, 62-68 and 70-85 in view of US patent 6,406,785.

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Rejections under 35 USC §112

Claims 37-60, 62-64, 73-81, 84 and 85

Claims 37-60, 62-64, 73-81, 84 and 85 stand rejected under 35 USC §112. Each of these claims has been amended to recite a particle size range corresponding to the specification.

Support for this amendment is found in the specification at Page 7, lines 1-2, which recites "The UHMW olefinic particles 62 may be in a size range of approximately 20 microns to approximately 200 microns..."

With respect to the recitation of the term " approximately", the Federal Circuit has stated:

> We note that like the term "about," the term "substantially" is a descriptive term commonly used in patent claims to "avoid a strict numerical boundary to the specified parameter." *Pall Corp. v. Micron Seps.*, 66 F.3d 1211, 1217, 36 USPQ2d 1225, 1229(Fed. Cir. 1995); *See, e.g., Andrew Corp. v. Gabriel Elecs. Inc.*, 847 F.2d 819, 821-22, 6 USPQ2d 2010, 2013(Fed. Cir. 1988) (noting that terms such as "approach each other," "close to," "substantially equal," and "closely approximate" are ubiquitously used in patent claims and that such usages, when serving reasonably to describe the claimed subject matter to those of skill in the field of the invention, and to distinguish the claimed subject matter from the prior art, have been accepted in patent examination and upheld by the courts). In this case, "substantially" avoids the strict 100% nonuniformity boundary. *Ecolab Inc. v. Envirochem Inc.*, 60 USPQ2d 1173 (Fed. Cir. 2001)

As the modifier "approximately" serves to reasonably describe the subject matter to those of skill in the art and does render the claim indefinite, applicant respectfully submits these claims comply with 35 USC §112.

In addition, certain claims have been amended to recite "permanently imparted polar functional group". As set forth in the specification:

> UHMW olefinic particles 62 such as VISTAMER™ surface modified particles by Composite Particles, Inc. of Allentown, PA have been found suitable. The surface treatment in the VISTAMER particles results in permanent changes to the structure and properties

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> of the polymer surface without sacrificing the desirable properties. The surface treated UHMW olefinic material and particularly the UHMW PE have been impacted polar functional groups of the particles, which results in high surface energy. [Page 7, lines 13-19]
>
> The UHMW polyethylene particles 62 are surface treated prior to combination with the thermoset material of the carrier 64. Specifically, the UHMW polyethylene particles 62 are surface treated with reactive gases. It is believed such a treatment induces a polarity in the previously non-polar olefins, including UHMW polyethylene. [Page 9, lines 3-7]
>
> It is believed the pre-treatment of the UHMW olefinic material and particularly the UHMW polyethylene particles induces a polarity which then results in a chemical bond between the olefinic particles 62 and the urethane (cross linked urethane) carrier 64. [Page 10, lines 17-20]

Therefore, applicant respectfully submits the amendment is clearly supported by the disclosure of the application as filed.

With respect to the recitation of "the surface projections having a size corresponding to the particle size", the attention of the Examiner is directed to the following sections of the written description:

> In the contact layer 60, the UHMW olefinic particles 62 are at least partially embedded within the thermoset carrier 64. A percentage of the thermoplastic particles 62 are entirely encapsulated by the thermoset material 64 and a percentage of the UHMW olefinic particles are at least partially encapsulated by the thermoset material. Thus, the contact layer 60 has a multitude of projections. The projections may be formed by the entirely encapsulated or partially encapsulated UHMW olefinic particles. (Page 7, line 20 – Page 8, line 2)
>
> It is believed the thermoset material 64 may wear from thermoplastic (UHMW polyethylene) particles 62 at the surface of the contact layer 60, thus exposing the UHMW olefinic material to the panel. The modified UHMW polyethylene particles 62 are

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> sufficiently chemically bonded to the modified urethane 64, such that unintended separation of the particles from the thermoset carrier is substantially precluded. As the overlying carrier material 64 is removed or abraded, or the overlying material deteriorates, the UHMW olefinic particles 62 do not separation from the carrier. Further, the stresses upon the UHMW olefinic particles 62 during engagement and disengagement with the panel do not induce separation of the UHMW olefinic particles from the carrier. (Page 8, lines 3-12)
>
> The relative high points defined by the projecting UHMW olefinic particles 62 (UHMW polyethylene), or the encapsulated UHMW olefinic particles provide a reduced surface area in contact with the panel. The projections are sufficiently sized and spaced to maintain a seal between the contact layer 60 and the panel. The reduced area of contact in combination with the UHMW olefinic particles 62 and thermoset carrier 64 results in a reduced static and dynamic coefficient of friction between the weatherseal and the panel. In addition, both wet and dry coefficients of friction are reduced by present configuration. (Page 8, lines 13-20)

Therefore, the written description discloses the projections corresponding to the size of the particles 62.

Rejections under 35 USC §103

Claims 42, 45-48, 50, 52-58, 60, 62-66, 68, 70-72 and 85

Claims 42, 45-48, 50, 52-58, 60, 62-66, 68, 70-72 and 85 stand rejected under 35 USC §103 of as being unpatentable over Chihara (US 5,115,007) in view of Nybakken (US 5,605,657) and Yamaguchi (US 4,511,526) as evidenced by Howell (US 5,972,520) and McCurdy (US 5,451,457). [Paper 1002004, page 4]

The primary reference Chihara (US 5,115,007) is relied upon to disclose weatherstrips for automobile glass run channels in which an EPDM substrate is coated with a low friction, abrasion resistant coating composition which is comprised of a thermosetting polymeric binder

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derived from a solution comprising a blocked polyurethane prepolymer, silicone oil and a cross linking agent. Compounding additives such as micro powders are polyethylene and may also be included in the coating composition (Col. 6, lines 57-67).

Nybakken is directed to solid tires made of an elastomeric material to carry extreme loads while being used in rugged off road terrain (Col. 1, lines 8-11).

Nybakken teaches away from the present claims.

Nybakken is directed to a solid tire having good abrasion resistance and good tear resistance *without sacrificing good skid resistance*. [emphasis added] (Col. 1, lines 3-38). That is, Nybakken is directed to a *high friction* tire.

> Thus, under the teaching of the prior art, one would expect that the addition of silicone to polyurethane, to increase wear resistance would result in a tire that has decreased skid resistance. In fact, such silicones are added to castable urethanes to act as slip agents. Thus, there is a need for a solid, castable polyurethane tire that combines the characteristics of good abrasion resistance, good tear resistance, without sacrificing good skid resistance. (Col. 1)

> We have discovered that a cast polyurethane tire having a critical amount of a specific silicone dispersed in the prepolymer, before curing, provides surprisingly good resistance to split-tear failure, in combination with high abrasion resistance, without a decrease in skid resistance. The inven- (Col. 2)

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As seen in Figure 3 of Nybakken,

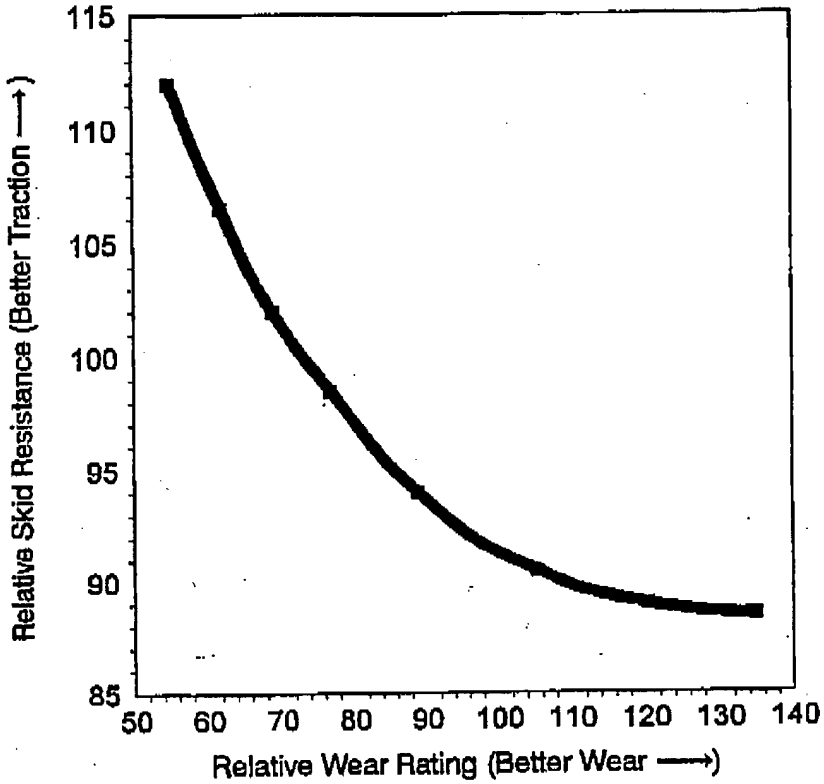

FIG. 3

the higher the friction, the better the traction. Thus, the teaching of Nybakken to provide a solid rubber tire "without sacrificing good skid resistance" certainly suggests high friction for the tire. In contrast, the present claims are directed to a friction reducing or low friction weatherseal.

A solid tire for maintaining a *high* coefficient of friction does not suggest a combination for forming a *low-friction* coating for a weatherseal.

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The Nybakken solid tires are not analogous art to the field of the present claims.

No appropriate basis has been provided for combining solid high friction elastomeric tires for carrying extreme loads in rugged off-road terrain (Nybakken) with a primerless, one-part, storage-stable, fast heat-curable, abrasion resistant coating composition which is useful as low friction, environmentally stable coatings for weatherstrip substrates (Chihara).

The problem to be solved in Nybakken includes providing a high friction wear resistant solid tire. The present application is directed to a weatherseal for repeatedly contacting a panel, wherein the weatherseal has a reduced coefficient of friction between the weatherseal and the panel, while providing enhanced sealing characteristics. While this relates to Chihara, the combination with the solid tires of Nybakken cannot support the asserted rejection.

The scope of the prior art includes art that is "reasonably pertinent to the particular problem with which the invention was involved." *Stratoflex, Inc. v. Aeroquip Corp.*, 713 F.2d 1530, 1535, 218 USPQ 871, 876 (Fed. Cir. 1983). *Ruiz v. A.B. Chance Co.*, 57 USPQ2d 1161 (Fed. Cir. 2000).

A solid rubber tire with improved skid resistance (high friction) is not "reasonably pertinent" to a weatherseal for reducing friction.

The asserted motivation for combining Chihara and Nybakken is expressly contrary to the present claims.

Nybakken is relied upon to provide motivation to surface treat the polyethylene particles of Chihara "to improve the wear of the weatherstrip and to prevent the polyethylene particles from bleeding to the surface of the cured polyethylene contact layer." [1002004].

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In contrast to preventing the particles from bleeding to the surface, the present claims are directed to providing or forming surface projections.

Specifically, the particulates "having a size . . . to form surface projections," (Claims 37-39, 73 and 74 and 84); "the contact layer including surface projection forming . . ." (Claims 40-41 and 75-77); "a contact layer having a multitude of surface projections..." (Claims 42-46); "particulates sized to create friction reducing surface projections..." (Claims 47-55, 78-79 and 85); "to ...form surface projections..." (Claim 56); "particulates forming surface projections..." (Claims 57-60, 62-64, and 80-81) and "particulates forming surface projections..." (Claims 65-68 and 70-72).

Therefore, this asserted combination of Chihara and Nybakken to prevent the polyethylene particles from bleeding to the surface is inopposite to the present claims.

Further, the present problem to be solved has been defined in terms of its solution, which reveals improper hindsight in the selection of the prior art. *Monarch Knitting Machinery Corp. v. Sulzer Morat Gmbh*, 45 USPQ2d 1977, 1981 (Fed. Cir. 1998).

For example, the optional micropowders of Chihara are fillers used to control viscosity and provide a flat, non-glossy appearance, proper hardness and toughness. [Col. 6, lines 60 - 65]. There is no suggestion in Chihara that the micropowders bleed to the surface. In fact, as the examiner has stated, the micropowders of Chihara form a surface of the Chihara weatherseal; to employ Nybakken to prevent particles from bleeding to the surface would be expressly contrary to Chihara.

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The asserted construction of Chihara requires the micropowders as the optimized particle size.

"Chihara is understood to implicitly teach the use of the particles to reduce friction." [Paper 1002004, page 13]. Thus, as Chihara is a low friction coating (Chihara, Abstract) and the particles of Chihara are used to reduce friction, such interpretation would clearly suggest that Chihara has optimized the particles to meet the object of the Chihara invention, a low friction coating. That is, it would be inexplicable to construe Chihara to be directed to a low friction coating, wherein the particles are implicitly used to reduce friction; yet the particles are chosen to increase friction. Therefore, Chihara must be construed to have optimized friction reduction by virtue of the micropowders.

Therefore, the asserted modification of Chihara to optimize the micropowder size is internally inconsistent with Chihara.

Varying the micropowders of Chihara (via Yamaguchi) is contrary to the express purpose of Chihara.

The Examiner relies upon Yamaguchi to vary the size of the polyethylene micropowder of Chihara, the motivation being to obtain low sliding resistance.

However, this combination fails to account for the matrix material of Chihara providing the low friction. There is no need to increase the Chihara micropowder to the recited 20 micron to 200 micron particle size, to optimize friction based upon particle size, as the Chihara matrix material provides the friction reducing features.

That is, in Chihara, the thermoset matrix composition yields the unexpected abrasion resistance and low friction (Col. 7, lines 35-40 and 45-50).

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Chihara expressly states "an important aspect of the present invention is the use of cross linking agents to obtain improved physical properties such as abrasion resistance." (Col. 4, lines 62-64). Thus, Chihara discloses a specific thermoset material for providing abrasion resistance and low friction. The micropowders of Chihara are not necessary and do not provide the desired abrasion resistance and low friction functionality. (Abstract, Col. 2, lines 12-27, Col. 4, lines 62-64).

The micropowders of Chihara are used as fillers, to control viscosity and provide a flat, non-glossy appearance, proper hardness and toughness to the applied cured coating film. (Col. 6, lines 61-66).

To employ Yamaguchi sized particulates in Chihara (to provide low friction) would obviate the express purpose of Chihara in providing a flat surface, in which micropowders are optional and the primerless matrix material provides the low friction.

With respect to the assertion the Chihara micropowders form surface projections, the claims have been amended to recite the surface projections corresponded to the particle size. As the recited particles are on the order of 1,000 times greater than the Chihara micropowder, the recited surface projections are distinct from the cited references. (Chihara does not define the size of the recited micropowders. However, US patents 6,727,536; 6,531,557 and 6,451,914 recite micropowders of a size $3x10^{-9}$m, $150\text{-}250x10^{-9}$m and $50\text{-}400x10^{-9}$m, respectively.)

This is more than a mere difference in size as Chihara relies upon the cured coating matrix, not the particles, for the low friction. To employ the presently recited particles would render the express purpose of the Chihara matrix moot, as the 1,000 times larger particulates would dictate the surface characteristics, rather than the matrix. No basis has been provided for modifying the low friction coating of Chihara with friction

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reducing particles approximately 1,000 times larger than the micropowders.

McCurdy

McCurdy is relied upon to disclose "polyethylene particles will bleed from polyurethane composition if they are not surface treated to improve compatibility." [Paper number 1002004, page 14]

Applicant respectfully submits McCurdy merely discloses the sprinkling of polyethylene particles having an average molecular weight in the range of about 3 million to 6 million, wherein the particles are electrostatically charged and dispersed by surface of the glass ribbon during the float class manufacturing process. There is no disclosure or suggestion of bonding the particles in a carrier, nor a thermoset carrier.

Therefore, applicant respectfully submits all the pending claims, Claims 37-53, 55-60, 62, 63, 65-68, 70, 71 and 73-85 are in condition for allowance, and such action is earnestly solicited. If, however, the examiner believes any further issues remain, he is cordially invited to call the undersigned so that such matters can be promptly resolved.

Respectfully submitted,

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Date: March 7, 2005

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